

Accepted Manuscript

Drug likeness prediction of 5-hydroxy-substituted coumarins with high affinity to 5-HT1A and 5-HT2A receptors

Teresa Żółek, Éva A. Enyedy, Kinga Ostrowska, Vivien Pósa, Dorota Maciejewska



PII: S0928-0987(18)30018-6
DOI: <https://doi.org/10.1016/j.ejps.2018.01.011>
Reference: PHASCI 4361

To appear in: *European Journal of Pharmaceutical Sciences*

Received date: 2 November 2017
Revised date: 28 December 2017
Accepted date: 4 January 2018

Please cite this article as: Teresa Żółek, Éva A. Enyedy, Kinga Ostrowska, Vivien Pósa, Dorota Maciejewska, Drug likeness prediction of 5-hydroxy-substituted coumarins with high affinity to 5-HT1A and 5-HT2A receptors. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Phasci(2017), <https://doi.org/10.1016/j.ejps.2018.01.011>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Drug likeness prediction of 5-hydroxy-substituted coumarins with high affinity to 5-HT_{1A} and 5-HT_{2A} receptors

Teresa Żołąk,^a Éva A. Enyedy,^b Kinga Ostrowska,^a Vivien Pósa,^b and Dorota Maciejewska^{a*}

^a Department of Organic Chemistry, Faculty of Pharmacy, Medical University of Warsaw, Banacha 1, 02-097 Warsaw, Poland

^b Department of Inorganic and Analytical Chemistry, University of Szeged, Dóm tér 7. H-6720 Szeged, Hungary

*Corresponding Author: Phone/Fax: (+48)-022-5720643 E-mail address: dmaciejewska@wum.edu.pl (prof. D. Maciejewska)

ABSTRACT

One of the latest trends is search for the new anti-psychotic drugs among coumarin derivatives with piperazine moiety. Their therapeutic potential can be hampered by poor physico-chemical parameters as low brain penetration or limited transport in the body fluid. Herein, we predicted the drug likeness of six coumarins with high affinity towards 5-HT_{1A} and 5-HT_{2A} receptors. Subsequent experimental determination of their binding constants to human serum albumin (HSA) revealed the binding with a moderate strength ($\log K = 4.8 - 5.8$) at the Sudlow's site 1, which represents a possibility of temporary storage of tested coumarins on HSA. Computational mapping of the binding of coumarins - HSA complexes showed that the coumarin rings of all tested compounds were similarly located within the hydrophobic binding pocket of HSA, while the rest of molecules (composed with alkyl chains, piperazine and benzene rings)

Download English Version:

<https://daneshyari.com/en/article/8511557>

Download Persian Version:

<https://daneshyari.com/article/8511557>

[Daneshyari.com](https://daneshyari.com)